

I.0 Introduction

Rizzo Associates, Inc., George E. Sansoucy, P.E., LLC and Hartman & Associates, Inc. were contracted by the City of Nashua to review and evaluate the acquisition of Pennichuck Corporation by Philadelphia Suburban Corporation (N.H. Public Utility Commission's Docket No. DW 02-126). This document has been prepared to summarize the findings of that evaluation and to provide the City of Nashua with recommendations relative to the acquisition.

I.1 Purpose of Study

The purpose of this study is to evaluate the various aspects of the acquisition of Pennichuck Corporation by Philadelphia Suburban Corporation (DW 02-126) for the City of Nashua, with the primary focus on the Pennichuck Water Works, Inc. subsidiary that services the City of Nashua. The following describes each of the five areas that were studied followed by the opportunities and recommendations that have been developed as a result of assessment of these five areas:

I.1.1 Assets and Liabilities

The Pennichuck Corporation was examined from the perspective of the flow of funds required to operate the corporation's utilities and the consequent impacts on its assets and liabilities. The results of this examination provided a baseline model for comparison with alternatives identified during the course of the review and provided an understanding of the financial and regulatory setting in which Pennichuck's and Philadelphia Suburban's utilities operate (See Section 2.0).

I.1.2 Water Capacity

The Pennichuck water system provides water to Nashua through a series of four impoundments (Holts Pond, Bowers Pond, Harris Pond, and Supply Pond), the Merrimack River, the Infilco Degremont Treatment Plant and a series of storage tanks and distribution mains. **Available information on the water system was reviewed with the intent of evaluating the future demand, safe yield, need for future supply, treatment facility and distribution system.** Based on review of these aspects of Pennichuck Water Works, a capital improvement plan was developed and compared to the current capital improvements being proposed by Pennichuck (See Section 3.0).

I.1.3 Watershed Management

Watershed management is in many ways the most cost-effective means of protecting the assets of a water utility. The Pennichuck Watershed Management Plan was reviewed and compared with four other model watershed plans. The evaluation compared the various aspects of a watershed plan including storm water management, pond eutrophication, buffer zones, transportation impacts, agricultural impacts, pollution sources, recreational activities, individual septic systems, public education, watershed protection, land acquisition and regulatory authority. The results of this comparison are presented in Section 4.0.

I.1.4 Philadelphia Suburban and Pennichuck Corporation

The Philadelphia Suburban Corporation was studied to show the structure of the second largest publicly owned water utility holding company and its motivations for acquisitions. The track record of Philadelphia's stewardship of utilities acquired was examined and the consequences of the proposed merger to ratepayers were evaluated. The results of this evaluation are presented in Section 5.0.

I.1.5 Regulatory and Legal Requirements

The regulatory and legal requirements for completion of the merger between Pennichuck and Philadelphia are outlined and discussed with options for participation by the City identified. Critical decision points were identified to the City and are documented in Section 6.0.

I.2 Pennichuck Corporation Background

The Pennichuck Corporation ("Pennichuck") is a holding company that owns five subsidiary companies. Pennichuck does not perform any function other than to direct and control the subsidiaries and receive their profits. Pennichuck is a stock company and its stock is traded on the NASDAQ exchange under the symbol PNNW.

The subsidiaries of Pennichuck are:

- Pennichuck Water Works, Inc. ("Pennichuck Water Works")
- Pennichuck East Utility, Inc. ("Pennichuck East")
- Pittsfield Aqueduct Company, Inc. ("Pittsfield")
- The Southwood Corporation ("Southwood")
- Pennichuck Water Service Corporation ("Service Corp.")

Pennichuck Water Works, Pennichuck East and Pittsfield are water utilities that are regulated by the New Hampshire Public Utilities Commission (PUC). The service area for each of the water utilities is shown in Figure 1.1. Southwood and the Service Corp. are not regulated by the PUC.

Pennichuck's roots go back to 1852 when Pennichuck Water Works was first formed in the City of Nashua, NH. Over the years the company grew and acquired various land holdings in and around the Pennichuck Brook that was its primary source of water. In 1980 Sasaki Associates, Inc. prepared "An Evaluation of Pennichuck Water Works Land Holdings as They Relate to Water Quality and Supply" for Pennichuck Water Works. This document identified the following breakdown of land that was held by Pennichuck Water Works at the time of the writing of that report:

Table I-I Land Holdings Summary (1980)

| | Area within Nashua (Acres) | Area within Merrimack (Acres) | Total Area (Acres) |
|----------------------|-------------------------------|----------------------------------|--------------------|
| Critical Areas | 395 | 105 | 500 |
| Buffer Zone | 335 | 170 | 505 |
| Alternative Use Area | 600 | 385 | 985 |
| Total | 1330 | 660 | 1990 |

Source: Taken from "An Evaluation of Pennichuck Water Works Land Holdings as They Relate to Water Quality and Supply" prepared by Sasaki Associates, Inc., dated June 1980.

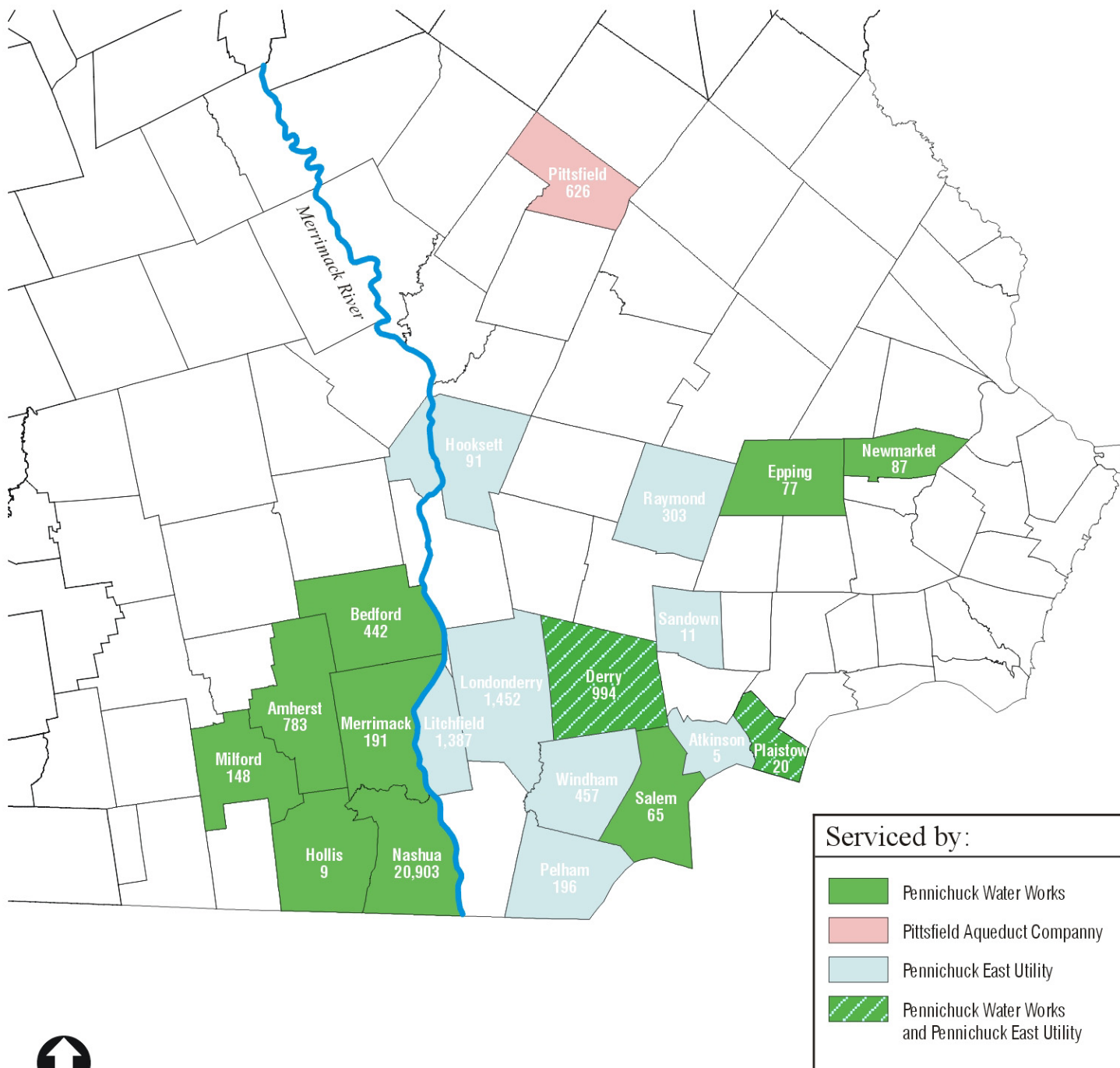
The following provides the definition of each of the three areas presented above based on the Sasaki report:

Critical Areas are unsuitable for alternative land uses because of their importance to the maintenance of water quality and supply.

Buffer Zone areas provide protection of the critical areas from potential alternative land uses. The intention is to preserve this "green strip" in its natural vegetative cover to provide groundwater recharge, flood protection, and storm water filtering.

Alternative Use Area are suitable for development because they are less environmentally sensitive than are the critical areas and because they are not directly tributary to the Pennichuck Brook system.

The report prepared by Sasaki Associates concluded that the land within the buffer zone and the alternative land use categories, 1,490 acres, would become non-critical areas that can be put to alternate uses upon completion of the water treatment facility. The report also stated that the alternate land use areas were no longer needed for the protection of the watershed. Figure 1.2 and Appendix A provide a summary of the status of the 1,990 acres as of August, 2002.



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Suitability of Lands for Alternative Use

Figure 1.2

Figure 1.3 shows the development that has occurred within the City of Nashua on land previously owned by Pennichuck Corporation.

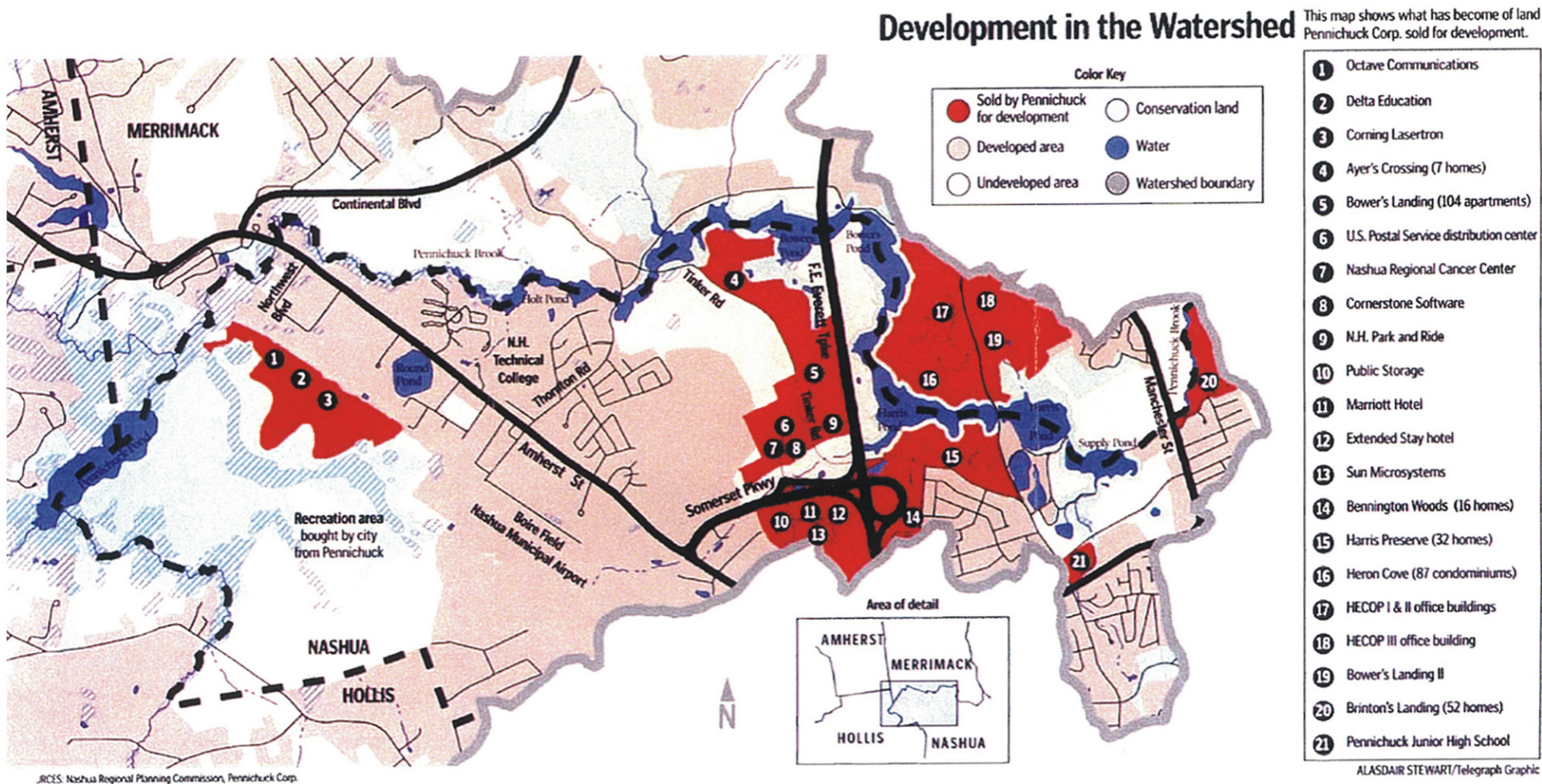
In 1983 Pennichuck Water Works was allowed to transfer ownership of land that the PUC found was not needed for utility purposes to Southwood and Pennichuck was formed to own (“hold”) the two companies. The holding company was needed because Pennichuck Water Works would continue to be regulated by the PUC and Southwood would not be regulated. In 1983, of the 1,990 acres of land owned by Pennichuck Corporation, 402 acres were transferred to Pennichuck Water Works and 1,088 acres of land was transferred to Southwood. The land transferred to Southwood was transferred for \$39,000 in 1983. Since this time, Southwood has sold 796 acres between 1984 and 2001 for industrial, commercial and residential development at an estimated cost of \$ 15.9 Million based on property rates from 1990. The gains from the sale of these lands were absorbed as profits to the investors of Southwood.

In 1998, the Town of Hudson, NH, purchased the Consumers New Hampshire Water Company (Consumers NH) with the intention of acquiring the water utility within the Town’s borders. Consumers NH also owned a number of variously sized water systems in southern New Hampshire the largest of which served portions of the Town of Litchfield. Hudson has no interest in owning and operating a regional water system and negotiated the sale of all of the utility properties outside of its boundaries to Pennichuck East, which was formed for that purpose.

Hudson also determined that it did not want to operate its new water system with Town employees but preferred to contract for its operation. Through a competitive bid process the operation and maintenance contract was awarded to the Service Corp.

The Service Corp. represents an opportunity for Pennichuck to expand its operations outside of the jurisdiction of the PUC by providing contract management, operation and maintenance services to a variety of water utilities in Massachusetts and New Hampshire. Such service operations are an increasingly popular adjunct to water and sewer utilities since they allow the utilities to apply their expertise in operations in an unregulated business.

Also in 1998 Pennichuck purchased Pittsfield, a small, closely held water utility serving about 600 customers in the village area of the Town of Pittsfield, NH. Pittsfield Aqueduct was facing a requirement to construct its first ever treatment plant and its owners did not want to deal with the complications of this expansion.



Pennichuck Water Works Land Holdings

1.3 Water Supply and Distribution Systems

Pennichuck Corporation has three subsidiaries that provide water to the various towns within southern New Hampshire. Figure 1.1 presents the customers served by each of the three Pennichuck Corporation water utilities. The following text summarizes the current distribution systems for each of the three water utilities:

Pennichuck Water Works, Inc. supplies water to the City of Nashua and limited areas of the Towns of Amherst, Merrimack, Milford, Hollis, Bedford, Derry, Plaistow, Epping, Salem and Newmarket. This service area provides water to 23,634 customers (based on the Annual Report submitted to the PUC dated December 31, 2001). Table 1.2 provides a summary of breakdown of customers served by Pennichuck Water Works.

Table 1-2 Customers Served by Pennichuck Water Works

| | Connections Served by Pennichuck | Percent of Customers Served |
|--------------|-------------------------------------|-----------------------------|
| Nashua | 20,902 | 88.4% |
| Amherst | 783 | 3.3% |
| Merrimack | 191 | 0.8% |
| Milford | 148 | 0.6% |
| Hollis | 9 | 0.1% |
| Bedford | 442 | 1.9% |
| Derry | 776 | 3.3% |
| Plaistow | 154 | 0.6% |
| Epping | 77 | 0.3% |
| Salem | 65 | 0.3% |
| Newmarket | 87 | 0.4% |
| Total | 23,634 | |

Source: Taken from Annual Report to the PUC dated December 31, 2001.

The sole source of water for the Pennichuck core system (City of Nashua and the Towns Merrimack, Amherst, Milford and Hollis) is from the Pennichuck Brook and Merrimack River Watersheds. The Pennichuck watershed lies in the towns of Nashua, Merrimack, Amherst, Milford and Hollis. The watershed consists of 17,984 acres that drain to a chain of ponds, Stump Pond, Pennichuck Pond, Holtss Pond, Bowers Pond, Harris Pond and Supply Pond. Water is withdrawn from Harris Pond and brought to the Water Treatment Plant. During drought or dry months water from the Merrimack River is discharged to Bowers Pond to supplement the demand at the Water Treatment Plant.

The Towns of Bedford, Derry, Plaistow, Epping, Salem and Newmarket are serviced by well systems.

The following summarizes the distribution system:

| | <u>PWW</u> | <u>City of Nashua</u> |
|-------------------------------------|------------|-----------------------|
| Distribution and transmission lines | 397 miles | 300 miles |
| Water meters | 23,820 | 20,000 |
| Hydrants | 2,223 | 2,000 |
| Well systems | 2 | 0 |
| Water intake plant | 1 | 0 |
| Storage tanks | 11 | 5 |
| Water treatment plant | 1 | 1 |

Pennichuck East Utility, Inc. supplies water to the Towns of Litchfield, Pelham, Windham, Londonderry, Derry, Hooksett, Sandown, Raymond, Plaistow and Atkinson. This service area provides water to 4,140 costumers (based on the Annual Report submitted to the PUC dated December 31, 2001).

The source for Pennichuck East is a well system owned by the Town of Hudson, located in Litchfield, New Hampshire. This water is supplemented by water from the Manchester Water Works.

The distribution system for Pennichuck East Utility consists of 111 miles of distribution and transmission lines, 4,181 water meters, 371 hydrants and a water treatment plant.

Pittsfield Aqueduct Company, Inc. supplies water to the Town of Pittsfield, which services 626 costumers (based on the Annual Report submitted to the PUC dated December 31, 2001).

The sole source of water for the Pittsfield system is from Berry Pond located in Pittsfield, New Hampshire. Water from this pond is treated by the Neptune Microfloc package treatment plant.

The distribution system for Pittsfield Aqueduct Company consists of 13 miles of distribution and transmission lines, 645 water meters, 70 hydrants and a package filtration plant.

The focus of this study is to evaluate the subsidiary that services the City of Nashua, Pennichuck Water Works, Inc. The following sections describe the review and analysis of the Pennichuck Water Works.